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NO

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AIG 8823

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UNCLAS

SUBJ: PETROLEUM TECHNICAL ADVISORY MESSAGE NUMBER 73 - HELPFUL INFO FOR SOLVING PROBLEMS WITH DIESEL FUEL GELLING AT LOW TEMPS

1. THE APC HAS RECEIVED NUMEROUS CALLS FROM ARMY ACTIVITIES REPORTING THE SUBJ PROBLEM. MOST OF THE REPORTS HAVE RELATED TO FUEL PURCHASED AND STORED SINCE SUMMER AND EARLY FALL. WE ARE PROVIDING ASSISTANCE ON A CASE BY CASE BASIS.

2. TO CORRECT THE GELLING PROBLEM WE HAVE BEEN RECOMMENDING BLENDING THE DIESEL WITH KEROSENE. A GOOD BLEND RATIO IS 60 PERCENT DIESEL

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AND 40 PERCENT KEROSENE WHICH IS THE COMMERCIAL PRODUCT GENERALLY AVAIL IN THE NORTH EAST DURING THE WINTER MONTHS. FOR ON-HIGHWAY USE THE KEROSENE MUST BE GRADE K1 (SULFUR CONTENT 0.03 WT PERCENT MAX) FOR EQUIP THAT IS NOT USE ON-HIGHWAY YOU MAY BLEND WITH OTHER KEROSENE TYPE FUELS SUCH AS GRADE K2, OR JET FUELS (JP8 OR JP5) AS THESE ALLOW THE SULFUR TO EXCEED THE EPA MANDATED 0.05 WT PERCENT MAX.

3. FOR MAX IMPROVEMENT, FUEL BLENDING MUST BE PERFORMED BEFORE THE ONSET OF COLD TEMPERATURES. ADDITION OF KEROSENE (OR OTHER BLENDING AIDS) TO AN ALREADY THICKENED OR VISCOUS DIESEL FUEL WILL BE INEF-FECTIVE IN DISSOLVING THE WAXY COMPONENTS. RECIRCULATING THE BLEND-ING FUEL (I.E. KEROSENE) WITH DIESEL FUEL IS ESSENTIAL FOR PROPER XING NEEDED TO LOWER THE CLOUD POINT. BLENDING IN THE FUEL TANKS OF USING EQUIP AND VEHICLES SHOULD BE UNDERTAKEN AS A LAST RESORT. "FLOW IMPROVERS AND POUR POINT DEPRESSANTS" SHOULD NOT BE ADDED TO DIESEL FUELS. THEY ARE INTENDED PRIMARILY TO IMPROVE THE LOW TEMP FLOW CHARACTERISTICS OF BURNER AND DISTILLATE FUELS. HOWEVER, THEY DO NOT SIGNIFICANTLY CHANGE THE CLOUD POINT VALUE. THESE ADDITIVES WILL BE INEFFECTIVE IN SOLVING COLD WEATHER PROBLEMS OF DIESEL FUEL.

4. THE FOLLOWING TABLE PROVIDES SPECIFIC BLENDING RATIOS AT VARIOUS

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TEMPERATURES (DEGREES F). IT WAS EXTRACTED FROM THE BELVOIR RESEARCH, DEVELOPMENT AND ENGINEERING CENTER TECHNICAL REPORT 2410, WHICH IS AVAILABLE FROM DTIC AS AD A144710, ENTITLED "FIELD BLENDING GUIDE FOR IMPROVING THE LOW TEMPERATURE PROPERTIES OF AUTOMOTIVE DIESEL FUELS".

GALLONS OF BLENDING FUEL TO ADD TO 100 GALLONS OF DF-2 TO OBTAIN THE DESIRED CLOUD POINT (DCP) (DEGREES F)

INITIAL CLOUD POINT

GALLONS OF BLENDING FUEL TO ADD TO 100 GALLONS OF DF-2

DCP	8	6	4	2	0	-4	-8	-10	-14	-16	-18
06	8	0									
	14	8	0								
0	30	22	14	7	0						
-4	70	57	43	34	25	0					
-8	86	70	54	43	34	7	0				
-10	109	89	70	52	45	13	7	0			
-14	186	139	105	82	64	24	14	8	0		
-16	204	150	113	89	70	27	18	10	3	0	
-18	234	171	128	100	79	32	22	14	6	4	0

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5. IF FURTHER ASSISTANCE OR CLARIFICATION IS NEEDED CONCERNING THIS ISSUE THE POC AT ARMY PETROLEUM CENTER IS MS. ILEANA YOST, DSN 977-6053, COMM 717-770-6053.

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